

NOTES ON VITTADINIA TRILOBA sens. lat. (COMPOSITAE)

NANCY T. BURBIDGE

Division of Plant Industry, C.S.I.R.O., Canberra, Australia

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Synopsis

Five taxa which have been included in *Vittadinia triloba* by some authors are discussed. A new name is supplied, *V. muelleri* N. T. Burbidge, for a species believed to represent part of Sonder's *Eurybiopsis hookeri* var. *angustifolia* and also a new name, *V. blackii* N. T. Burbidge is supplied for South Australian material formerly regarded as *V. tenuissima* (Benth.) J. M. Black.

The genus *Vittadinia* A. Rich., Ess. Fl. Nouv.Zel. 250 (1832), is distributed in Australia, New Guinea, New Caledonia and New Zealand, the main group of species being in the continental area. In the "Flora Australiensis" Bentham took a broad view of species limits and it has long been evident that a critical revision is required. In particular, the name *V. australis* A. Rich. was applied to a range of material showing considerable diversity and wide distribution in southern and eastern Australia. In more recent Australian botanical literature this name has been replaced with *V. triloba* Gaud. Preliminary study has indicated that some clarification of this assemblage is possible and, pending a more intensive treatment, five component taxa are considered below.

It has been found that achene characters are of diagnostic significance. The outline is usually spathulate to oblanceolate or cuneate and there is some asymmetry which varies with position in the head, but the prominence of the ribs on the flattened sides, as well as the nature and arrangement of the hairs, varies from species to species.

V. TRILOBA (Gaud.). DC., Prodr. 5: 281 (1836); *Brachycome triloba* Gaud., Bot., Freyc. Voy. 467 (1830); *V. australis* A. Rich. sensu Bentham. Fl. Austral. 3: 490 (1866); *Eurybiopsis scabrida* J. D. Hook., Lond. J. Bot. 6: 110 (1847); *E. hookeri* F. Muell. ex Sond. var. *scabra* Sond., Linnaea 25: 454 (1853); *V. scabra* DC. sensu J. D. Hook., Fl. Tasm. 1: 181 (1856) non DC. (1836).

The name *V. australis* A. Rich., to which Bentham referred the Australian material, was based on a New Zealand plant in which the ligulate florets are white, the inner involucrel bracts about 5 mm. long and the trilobed leaves are glandular-pubescent with ciliate margins. Since the Australian plants have violet-coloured ligules, the inner involucrel bracts are at least 6 mm. long and the vestiture of the leaves is different, separation seems justified. The type of Gaudichaud's species was collected in the Port Jackson area.

The plants are scabrid with spreading multicellular hairs on stems and leaves and also up the mid-line of the acuminate scales of the involucre: the hairy achenes are narrowly turbinate-spathulate, ribbed and slightly flattened. The distribution appears to be mainly in New South Wales, Victoria and Tasmania. See Fig. 1 A (achene).

V. CUNEATA DC., Prodr. 5: 281 (1836); J. D. Hook., Fl. Tasm. 1: 182 (1856); *Eurybiopsis gracilis* J. D. Hook., Lond. J. Bot. 6: 110 (1847); *E.*

hookeri F. Muell. ex Sond. var. *incana* Sond., Linnaea 25: 454 (1853); *V. triloba* var. *lanuginosa* J. M. Black, Trans. & Proc. Roy. Soc. S. Aust. 52: 229 (1928).

This species is distinguished by the woolly vestiture, especially on the stems, the achenes are more flattened and more hairy than in *V. triloba* and their narrow bases are clothed with appressed hairs. It is found in eastern New South Wales, Victoria, south eastern parts of South Australia and in Tasmania. See Fig. 1 B (achene) B₁ (bifid hairs).

V. MUELLERI, nom. nov.

Eurybiopsis hookeri F. Muell. et Sond. var. *angustifolia* Sond., Linnaea 25: 454 (153) quoad "Van Diemensland (Stuart)".

Holotype.—"Rockbank" adjoining Black Mountain Station, Wulgulmerang, N. E. Gippsland, alt. 2800 feet approx., J. H. Willis, 27.xi.1962 (MEL 30013).

Plantae ascendentes, minute glanduloso-pubescentes. Folia angusta, conduplicata, 1-4 cm. longa, integer vel lobis lateralibus, lobi angusti, divaricati, marginibus sparse ciliatis. Bractee involucrales minute glanduloso-pubescentes vel minute tuberculatae, marginibus membranaceis, apicibus obtusis, ciliolatis. Achaenia striata, dimidio inferiore villis appressis, dimidio superiore pubescentia praeter marginibus, villis clavatis.

The plants are tufted, the minutely glandular-pubescent stems ascendent with the narrow, more or less conduplicate leaves entire or with narrow spreading lobes slightly above the middle, but leaves almost lacking from the peduncles. Inner bracts of the involucre obtuse, without long hairs though minutely glandular-pubescent or the surface appearing minutely tuberculate, the margins ciliate towards the apices. Achenes flattened, cuneate-spathulate, the thickened margins glabrous, the lower portion with appressed hairs grading into slender clavate (sometimes minutely bifid) hairs spreading from between the ribs of the upper part, the ribs often inconspicuous on immature fruits. Distribution widespread in eastern New South Wales, Victoria and Tasmania. See Fig. 1 D (achene) D₁ (hairs).

New South Wales: 10 miles W. of Yarrowyck, New England, R. W. Jessup & M. Gray 1794, 17.x.1952 (CANB); 2 miles N. of Dumaresq, R. W. Jessup & M. Gray 1794, 17.x.1952 (CANB); Chiswick, 10 miles S. of Armidale, R. W. Jessup & M. Gray 1750, 23.x.1952 (CANB); Cherry Hill, Armidale district, R. Roe R548, 16.ii.1945 (CANB); Kentucky, R. Roe R569, 21.ii.1945 (CANB); 8 miles S. of Cessnock, R. Story 6708, 2.x.1959 (CANB); Fairfield, O. D. Evans, 3.xii.1929 (CANB); Concord, O. D. Evans, 4.ii.1927 (CANB); Mt. Jerrabomberra, S. of Queanbeyan, N. T. Burbidge 6696, 6.xi.1960 (CANB); *Australian Capital Territory*: near Burbong Village, Molonglo River, P. J. Darbyshire 541, 21.xii.1961 (CANB, N.S.W.); Turner, Canberra, R. Pullen, 1267, 21.ii.1959 (CANB); Black Mountain, C. W. E. Moore, 5.x.1945; also W. Hartley, 12.iv.1944 and R. Pullen 2061, 23.ii.1960 (all CANB); Kambah-Tharwa road, 3 miles past Kambah turn-off, M. Gray 3582, 18.xii.1958 (CANB); Michelago, New South Wales, H. S. McKee 7487, 23.x.1960 (CANB); *Victoria*: Heathcote, J. H. Willis, 7.xi.1961 (MEL 30018); *Tasmania*: Mt. Nelson, C. E. Lord, January 1930 (CANB); Tasmania, Stuart (MEL 30015).

Sonder listed two specimens under the variety *angustifolia*, one from Van Diemensland and the other from Holdfast Bay (South Australia) collected by Mueller in May. At Melbourne there is a Mueller specimen of 1851 from the Sonder Herbarium which is believed to represent the second.

No Stuart material that might be definitely associated as having been examined by Sonder has been located. There is however a specimen on which the label reads: "Eurybiopsis hookeri ferd Mill. var. laciniata, Tasmaniae Stuart" in Mueller's handwriting. Until proved otherwise this may be part of the specimen seen by Sonder since it does, in fact, agree more closely with his description than does the plant from Holdfast Bay. Sonder's text reads: "foliis . . . glabris vel subtus setulosis marginibus ciliolatis, inferiore plerumque incisodentatis . . . achaenia puberulis."

In the opinion of the writer the two specimens represent distinct species, one described here and the other agreeing with material wrongly referred to *V. tenuissima* (Benth.) J. M. Black and discussed below.

V. TENUISSIMA (Benth.) J. M. Black, Trans. & Proc. Roy. Soc. S. Aust. 52: 229 (1928) quoad comb., descr. excl.; *V. australis* A. Rich. var. *tenuissima* Benth., Fl. Austral. 3: 491 (1866).

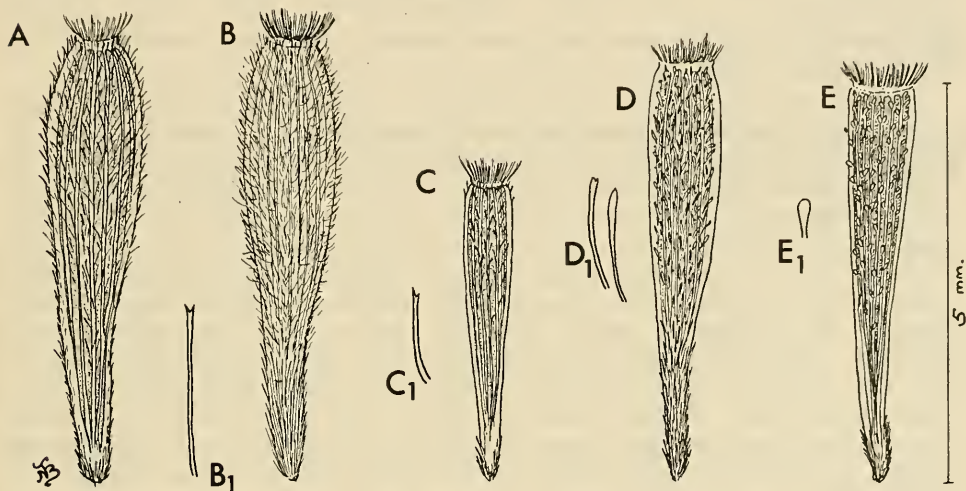


Fig. 1. A. *Vittadinia triloba*: achene. (from "Glenfield, O. D. Evans, 27.vii.1928."). B. *V. cuneata*: achene; B₁ hair. (from "Jerilderie, N.S.W., E. D'Arny 388"). C. *V. tenuissima*: achene; C₁ hair. (from "Grose Vale, Carne, N.S.W. 101651."). D. *V. muelleri*: achene; D₁ hairs from upper part of achene. (from "Tharwa road Kambah, A.C.T., Gray 3582.") E. *V. blackii* achene; E₁ hair. (from holotype.)

Bentham quoted Port Jackson specimens collected by Robert Brown and by Woolls and a Mueller specimen from Burnett River (Queensland). Judging by photographs of the first and third of these and by specimens in the New South Wales Herbarium, the leaves are extremely slender and almost or quite glabrous though the stems, which have a pronounced tendency to branch corymbosely in the upper half above a simple base, are minutely hairy. As noted by Bentham, the heads are small, the involucre being only 4-5 mm. long and the achenes 3.5-4.5 mm. long. This species is apparently distributed from south east Queensland through the Northern Tablelands of New South Wales and south through coastal districts to near the Victorian border. Fig. 1 C (achene) C₁ (hair).

Though Black based his combination on Bentham's varietal name his description does not fit the type material. He states "involucrum 7-8 mm. longum . . . achaenia 4-5 mm. longa puberula utrinque circiter 6-costata . . ."

He also mentions the ligules as numbering 15–20 which is higher than in the eastern Australian specimens examined. It is thus evident that though his combination is the correct name for the species typified as Bentham's var. *tenuissima*, his description covers a different species. This latter is discussed below.

V. BLACKII, nom. nov.

V. tenuissima (Benth.) J. M. Black quoad descr., basion. excl.; *Eurybiopsis hookeri* F. Muell. et Sond. var. *angustifolia* Sond., *Linnaea* 25: 454 (1853) quoad "Holdfast Bay, Mai".

Holotype.—Old Stockade Hill, Northfield, ca. 10 km. N.N.E. of Adelaide, South Australia, D. N. Kraehenbuehl 153, 5.iii.1960 (AD 96422044).

Plantae minute glanduloso-pubescentes, villis septatis sparsim ornatae. Folia lineari-teretia vel lineari-conduplicata, 1–1.5 (–3) cm. longa. Bractee involucrales minute glanduloso-pubescentes, marginibus membranaceis, apicibus ciliatis. Achenia striata, dimidio inferiori glabra villis appressis infra exceptis, dimidio superiori minute pubescentia, villis brevibus crassis clavatis etiam ornata.

Plants subshrubby, 10–30 cm. high, older stems more or less decumbent and woody, stems much branched, bearing septate hairs mixed with minute glandular pubescence. Leaves linear, conduplicate but usually so narrow as to appear terete and channelled above; mostly 1–1.5 cm. long but occasionally longer with sparse scattered hairs and few minute glandular ones, the surface more or less glistening. All stems terminating in solitary heads, involucre 7–9 mm. long, bracts with green centres bordered with minute glandular hairs, a few longer hairs sometimes present, margins membranous and ciliolate towards the acuminate apex. Achenes shorter than innermost bracts, flattened, narrow cuneate, deeply ribbed, with scanty appressed hairs at base but otherwise glabrous in lower half, the upper half with projecting short clavate hairs, margins glabrous, pappus bristles very numerous, smooth towards base but barbellate above. Fig. 1 E (achene) E₁ (hair). Distribution mainly restricted to South Australia but also recorded from western New South Wales and north eastern Victoria with one record from Western Australia.

This species can be separated from *V. muelleri* by the septate hairs on the stems, the scattered hairs of the leaves and by the deeply ribbed achenes with fewer and short clavate hairs attached to the ribs rather than between them.

Western Australia: Halfway between Mt. Ragged and Victoria Spring, Miss S. Brooks, 1886 (MEL 30012); *South Australia*: Birksgate, M. Koch, Sept. 1902 (NSW 101654); Lake Eyre Basin, Schomburgk (AD 96826384); Hambidge Flora and Fauna Reserve (ca. 140 km. N. of Port Lincoln) Eyre Peninsula, C. R. A. Alcock 1103, 10.x.1966 (AD 96711206); Thrington on Thrington-Moonta road, Upper Yorke Peninsula, B. Copley 163, 27.iii.1966 (AD 96622021); Maitland, Yorke Peninsula, J. M. Black, April 1917 (AD 96826385); ca. 2½ km. S. of Hamilton on road to Kapunda, Mt. Lofty Range, H. J. Eichler 12074, 7.xii.1955 (AD 95902036); Freeling Cemetery, ca. 55 km. N.N.E. of Adelaide, D. N. Kraehenbuehl 1505, 18.ix.1965 (AD 96724004); Adelaide Plains near Adelaide, J. M. Black, April 1917 (AD 9682385); North bank of Dry Creek, east of Yatala Prison Farm, Adelaide Plains, D. N. Kraehenbuehl 465, 13.ix.1961 (AD 96426228); Brighton, J. M. Black, 18.ix.1904 (AD 96826386); Echunga district, R. F. Parsons 212, 27.x.1961 (AD 96348243); Murray Bridge, J. H. Maiden, January 1907

(NSW 101655); Sandergrove, O. E. Menzel, Oct. 1896 (AD 96826380); Port Elliot, Fleurieu Peninsula, J. B. Cleland, 25.i.1925 (AD 9682383); sine loc., Behr, 10.ii.1845 (MEL 30009) (type of *Aster behrii*?) *New South Wales*: Interior, Behr (MEL 30016); *Victoria*: Murray Desert, Behr (MEL 30011); Pine Plains, Wimmera, Behr 215 (MEL 30017).

Key to species discussed

1. Leaves spatulate, oblanceolate or cuneate, entire or 3-lobed at the apex. Achenes 5-6 mm. long, narrowly oblanceolate, vestiture on both sides and margins consisting of slender hairs with bifid apices above underlying glandular pubescence.

2. Plants clothed with soft woolly hairs; basal part of achene with dense appressed hairs, the hairs of the upper part spreading and obscuring the ribs:

cuneata

2a. Plants scabrid with spreading septate hairs; lower part of achene almost glabrous except for short appressed hairs at base, upper part prominently ribbed, slightly flattened but turgid, hairs spreading:

triloba

1a. Leaves filiform, linear or narrowly elliptical-oblanceolate, entire or sometimes with a pair of spreading narrow lobes near or above the middle; achenes narrowly cuneate or spatulate-cuneate, margins glabrous or almost so.

3. Leaves filiform, almost or quite glabrous; involucre 4-5 mm. long, achenes 3-5-4 mm. long; lower half glabrous apart from short appressed hairs at base, upper half with sparse slender spreading hairs with bifid apices; glandular pubescence lacking:

tenuissima

3a. Leaves sparsely hairy, hairs septate; involucre 6-9 mm. long; achenes 4-5-5 mm. long, minute glandular pubescence present below hairs.

4. Leaves with scanty hairs on margins and on midrib of lower surface; lower part of achene clothed with slender appressed bifid-tipped hairs which grade into slender obtuse or bifid-tipped clavate hairs growing between the ribs which are often inconspicuous before maturity:

muelleri

4a. Leaves with scattered hairs; achenes with appressed slender hairs at base of glabrous lower half, deeply striate above with 6-7 prominent ribs on each side even when young, the ribs bearing short clavate hairs:

blackii